DOCUMENT RESUME

ED 306 680 EA 020 942

TITLE	Center for the Study of the Teaching Profession: Annual Report, October 1987 to September 1988.
INSTITUTION	Rand Corp., Washington, D.C.
REPORT NO	AR-3919-CSTP
PUB DATE	Oct 88
NOTE	35p.
AVAILABLE FROM	Publications Department, The RAND Corporation, 1700 Main Street, P.O. Box 2138, Santa Monica, CA 90406-2138 ($4.00; quantity discounts).
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Annual Reports; *Educational Change; Elementary Secondary Education; Excellence in Education; *Teacher Certification; *Teacher Education; *Teacher Effectiveness; *Teacher Selection; *Teacher Supply and Demand
IDENTIFIERS	*Rand Corporation

ABSTRACT

In 1985, the Rand Corporation launched the Center for the Study of the Teaching Profession (CSTP) to study and facilitate the emergence of a new model of accountability in education. The mission of the CSTP is briefly described. Areas in which research has been completed over the past 3 years are presented: teacher education and licensing; teacher selection and evaluation; teacher supply and demand; and educational reform. In addition to Rand's own publications, CSTP research is also disseminated through journal articles and book chapters, RAND notes, commission reports, and newspaper "op-ed" pieces. A list of these sources is provided. Work currently under way in the four areas related to teacher quality and supply is listed. A partial list of the agencies and associations directly addressed through presentations by CSTP staff members is provided as well as a list of the organization's management and staff. (SI)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED306680

Center for the Study of the Teaching Profession

Annual Report

October 1987 to September 1988

AR-3919-CSTP

October 1988

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Bill Bowmer

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EA 020 942

RAND

Center for the Study of the Teaching Profession

Center for the Study of the Teaching Profession

Annual Report

October 1987 to September 1988

AR-3919-CSTP

October 1988

RAND
1700 MAIN STREET, P.O. BOX 2138
SANTA MONICA, CA 90406-2138

Center for the Study of
the Teaching Profession

CONTENTS

Director's Message 1
Mission 3
Completed Research 4
Additional Publications 15
Research in Progress 19
Dissemination 21
Management 24
Staff 25
Funding 26
About The RAND Corporation 27
The RAND Corporation Board of Trustees 28
For Further Information 30
RAND Publication Order Form 31

DIRECTOR'S MESSAGE

The goal of many educational policies is to promote accountability—to cause schools to perform as policymakers think they should perform or to call to account those who are at fault. Policymakers and the public are rightfully concerned about accountability. After all, public schools are a public enterprise. Policymakers want the schools to produce good educational results. Policymakers want schools that will prepare students not only to read, count, and memorize but also to write, analyze, and create. However, all too often, the measure of good preparation is the standardized multiple-choice test. These tests fail to fully capture the public's higher aspirations for education.

Equating good educational results with good test scores alters the ends and means of schooling. Holding schools and teachers accountable for test results alters the incentive structure of the school. When students, teachers, and schools are to be judged by test performance, the energies of all become directed to that result.

Several consequences follow. If standardized multiple-choice tests fall short of measuring the goals of schooling, the goals are narrowed. If test item types and test items become known, standardized tests further limit the goals of education. As test results are emphasized, tests no longer *sample* what students know; they become the *full measure* of what students know.

If policymakers want schools to produce good educational results, they must use accountability mechanisms that do not distort educational ends and means. Professional accountability promises to hold educators accountable without such distortions.

Professional accountability promotes good educational results by promoting good educational practice. The focus on practice accommodates rich conceptions of educational ends and means. Whereas test-based accountability seeks to secure better schooling by more frequent measurement, professional accountability seeks to guarantee qualified teachers, hence good teaching practice.

Professional accountability demands:

- Reform of teacher education so that prospective teachers are well-educated and knowledgeable about teaching. Increasingly, this preparation is seen as requiring a four-year liberal-arts education, a fifth year of graduate-level professional and pedagogical preparation, and a year-long supervised internship.
- Reform of teacher licensing so that prospective teachers must demonstrate that they have acquired the knowledge and developed the skills necessary to practice independently. Increasingly, certification is seen as requiring the creation of state professional practices boards to establish and enforce meaningful standards for entry to teaching.
- Reform of schools so that they can accommodate the professional practice of teaching. Increasingly, this change is seen as requiring teacher participation in school planning and decisionmaking so that educators articulate, share, practice, and enforce a common set of educational standards.
- Reform of teacher organizations to balance the functions of the unions and professional associations. Increasingly, this reform is seen as requiring the National Education Association (NEA) and American Federation of Teachers (AFT) to collaborate with states and school districts to establish workable procedures for identifying incompetent teachers and remedying their deficiencies or removing those who cannot overcome them.

- Reform of testing practices so that student assessment encourages good educational results and professional teaching practices. Increasingly, these practices are seen as requiring essay examinations and the evaluation of student projects and products, with teachers involved in developing outcome criteria and grading beyond their own classrooms.

Taken together, these reforms would begin to ensure every child access to good educational practices and ultimately good educational results.

In the late 1970s, research at RAND began to point to the limits of test-based accountability. In the early 1980s, the prospect of professional accountability began to appear on the educational horizon. In 1985, RAND launched the Center for the Study of the Teaching Profession to study and facilitate the emergence of this new model of accountability in education. The center has now completed three years of operation. Although teacher professionalism is not yet fully in view, discussion of it is moving toward the center of educational deliberations.

Arthur E. Wise

MISSION

Legislators and other education policymakers enact education policies to solve education problems. Often they must act without knowing all that they would like to know about the consequences of their actions. However, they ought to know all that can be known before they act. There is a growing body of research-derived knowledge about the conditions for effective teaching and the factors that affect recruitment and retention of teachers. The CSTP's purpose is to translate this knowledge so that government policy advances classroom practice. The CSTP is committed to helping policymakers design solutions that can realistically be implemented by legislation or policy. A central concern is to ensure that scarce public resources are not squandered on schemes that are unlikely to achieve their intended effects.

To accomplish these ends, the CSTP

1. Studies the effects of policies on teachers and teaching
2. Helps to design, implement, and evaluate policies at the state, local, and national levels
3. Helps policymakers and educators anticipate the problems and opportunities that they will face in the future
4. Provides state, local, and national policymakers with informed, impartial analyses
5. Facilitates the transfer of knowledge from one state or school district to others
6. Disseminates ideas and findings that hold promise.

Through these means, the CSTP will assist policymakers at the local, state, and national levels as they seek to ensure an adequate supply of highly qualified teachers for the nation's schools.

COMPLETED RESEARCH

Research completed over the past three years addresses some of the major policy questions confronting the teaching profession: teacher education and licensing, teacher selection and evaluation, teacher supply and demand, and educational reform.

TEACHER EDUCATION AND LICENSING

The Evolution of Teacher Policy

In the 1980s, nearly every state enacted new policies to reform teacher education, licensing, and compensation—more than 1,000 new pieces of legislation in all. They focused on the hiring of only those teachers best qualified to teach and to handle classroom decisions. This report examines trends in the state reforms governing teacher certification and compensation implemented between 1978 and 1986 in light of the current push toward the "professionalization" of teachers.

In the recent call for higher educational standards, reformers argue that the present system and the teachers in it must be prepared to teach not only basic skills but the highly technical knowledge that students will need, as well as to stimulate students to think critically. These efforts require both curricular changes and teachers who themselves possess this knowledge and ability. Between 1983 and 1985, more than 700 pieces of legislation to upgrade the quality of the teaching force were enacted; primarily they tighten entrance requirements and increase incentives to retain talented teachers.

By mid-1986, 46 states were using or developing statewide tests for teacher certification or for entry into teacher education. Twenty-seven states required that applicants to a teacher education program meet certain levels of test scores or academic achievement. Also by 1986, about two-thirds of the states had redefined the specific program requirements for teacher certification. In general, these new requirements have emphasized training in liberal arts and subject matter over education courses, on the theory that liberally educated people require little more than guided practical experience to become effective teachers. Other states are moving toward five-year teacher-training programs that include specific training in teaching. Moreover, some states are now requiring that teachers get a specific credential in a subject matter and grade level.

Compentency tests in basic skills, subject matter, or professional knowledge were required in all but four states by 1986. Such tests, however, have been criticized for their lack of reliability and validity, their disparate results among ethnic groups, and their inability to measure professional knowledge. And at the same time that states are restricting teacher qualifications, they are providing loopholes for candidates—emergency certification—to avoid these qualifications in periods of teacher shortages.

The 1980s have also seen dramatic changes in teacher compensation policies, designed to persuade highly qualified people to enter and stay in the profession. Teacher pay is no longer a local issue; several states have authorized across-the board raises in the last decade. More have provided higher salaries for new teachers as an inducement: At least 30 states have minimum starting salaries, and others have salary schedules insuring raises with experience and education. However, although a new teacher may earn more than a new teacher did a few

years ago, the new starting salary is probably much lower than those for other jobs. And despite increases, the average teacher's buying power in 1986 was still about 15 percent worse than the average teacher's in 1972.

The profusion of new methods for increasing teacher pay in the 1980s—being considered in all but seven states—focus primarily on different performance-based compensation: merit pay, career ladders, and incentive programs. Proponents argue that these will provide teacher accountability, enhance the status of teachers, motivate them, and attract and retain talented teachers. Opponents argue that they are bureaucratic nightmares and create unhealthy competition among teachers. Ultimately, these programs must establish that they in fact improve the quality of education.

The many state-mandated teaching reforms of late have been found unwieldy, unworkable, or too new to assess accurately. But the differences in the types of reforms suggest a lack of agreement over whether teachers should be considered relatively unskilled workers or professionals. The next generation of teacher policy reform will need to focus on the content and nature of effective teaching, its assessment, and its deployment within schools to ensure the long-range goals of better education. The current challenge is to determine what refinements should be legislated and what left to local districts, schools, teachers, and professional bodies. At this juncture the involvement of the profession is critical.

The Evolution of Teacher Policy, Linda Darling-Hammond and Barnett Berry, The RAND Corporation, JRE-01, March 1988.

Professional Licensing for Public School Teachers

During the 1980s, public attention to the quality of public school education has increased concern about the quality of teachers. State governments have responded by creating new programs, especially tests that determine how much teachers know about particular subjects, as well as their reading, writing, and math skills. But while this kind of testing is relatively easy, evaluating teaching skills is far more complex. For the Minnesota Board of Teaching, RAND has developed a plan to evaluate the teaching skills of beginning teachers before they are issued a continuing license. The proposed system of evaluation would ensure that licensed teachers have the knowledge and skills to practice as full professionals.

After first reviewing and analyzing research literature and Minnesota's particular needs, staff studied nationwide developments in the testing of beginning teachers and analyzed how other professions assess the skills of their new members before licensure. This assessment provided insight into the context for changing teacher testing, the dilemmas of professional testing, the function of teacher education and the professional internship, and the purposes of testing teachers. Among the many findings and conclusions that informed the recommendations:

- Strengthening standards for teachers, while also improving salaries and working conditions, may help prevent, mitigate, or solve the problem of a coming teacher shortage.
- Teachers should be liberally educated and should have a major in the subject they will teach.
- Teacher education cannot be accomplished within a four-year undergraduate curriculum and should be accomplished at the graduate level.
- Existing tests are not necessarily good measures of effective teaching.

- A test of teaching skills should assess the candidate's ability to analyze teaching situations and produce effective responses.
- The capacity to teach cannot be developed or addressed well before candidates have the opportunity to teach under supervision.
- An internship can be an integral part of teacher education and a prerequisite for licensure.

This report presents a new approach to evaluating the teaching skills of beginning teachers. It is analogous to the approaches used by other professions to safeguard the public interest and inspire public confidence in their members. This approach has three principal aspects: (1) Teacher preparation must be conceived to include a year of internship, during which candidates can acquire and demonstrate teaching skills; (2) candidates for a continuing license must present evidence that they have successfully completed the internship; and (3) candidates must pass a state examination that would assess the candidate's ability to exhibit skills related to effective teaching in a variety of contexts.

Existing approaches to beginning-teacher evaluation fail to assure that the beginning teacher is fit to receive a continuing license. The above approach, together with examinations in subject areas, would provide this assurance.

Licensing Teachers: Design for a Teaching Profession, Arthur E. Wise, Linda Darling-Hammond, with Barnett Berry and Stephen P. Klein, The RAND Corporation, R-3576-MBOT/CSTP, November 1987.

TEACHER SELECTION AND EVALUATION

Effective Teacher Selection

To meet the growing demand for new teachers, many school districts will need to revise their selection and hiring procedures so they can better recruit, select, and retain well-qualified personnel. This broad and comprehensive report examines teacher selection practices in six school districts and analyzes how teacher selection can improve the supply, quality, and retention of the teaching force. Based on the six case studies, the report offers a sweeping set of recommendations for policy, procedural, and institutional improvements. The study also analyzes problematic and promising recruitment, screening, hiring, placement, induction, and evaluation practices, and examines conditions causing two of every five new teachers to quit within their first three to five years.

One main reason new teachers quit lies in school system personnel policies that allow senior teachers to transfer to more "desirable" schools and that place many of the newest teachers in the least attractive, most troubled schools. The authors offer the innovative suggestion that districts create supervised "induction schools," modeled along the lines of teaching hospitals, to advance teaching as a profession. There novice instructors would receive guidance from master teachers and support from trained administrators, rather than simply being tossed into high-turnover schools without adequate resources and experienced personnel. An alternative is to disperse new teachers among all types of schools and provide them mentors. Senior teachers should also be persuaded with incentives and improved working conditions to remain in "difficult" schools.

The study offers several prime examples of barriers to effective teacher selection:

- Districts frequently hire less than the best for reasons ranging from poor management to antiquated information processing.
- Local candidates who persist in trying to land a job in a particular school often succeed where more qualified applicants from outside the school or its area are rejected.
- Although some districts cast a wide recruiting net, state and local policies, such as retirement plans and salary ceilings, commonly restrict officials wishing to upgrade their candidate pool with applicants from outside the state.
- The teacher application process often is marked by impersonal, unprofessional treatment.

Among the authors' recommendations are calls for state and local action to remove regulations blocking a free teacher market; tighter management and planning, including closer coordination between the various selection stages; better alignment of screening criteria with the goals of the system and the needs of individual schools; and teacher involvement to improve the reliability of selection and the cohesion of the staff.

Once new teachers have been well-prepared, properly trained, given experience, and carefully scrutinized, school districts can allow them to operate as independent professionals. They will then have earned the confidence of the public. The selection process for teachers is the key juncture at which school systems can upgrade the quality of the teaching force.

Effective Teacher Selection: From Recruitment to Retention, Arthur E. Wise, Linda Darling-Hammond, Barnett Berry, with David Berliner, Emil Haller, Amy Praskac, and Phillip Schlechty, The RAND Corporation, R-3462-NIE/CSTP, January 1987.

Effective Teacher Selection: From Recruitment to Retention—Case Studies, Arthur E. Wise, Linda Darling-Hammond, David Berliner, Emil Haller, Phillip Schlechty, Barnett Berry, Amy Praskac, George Noblit, The RAND Corporation, N-2513-NIE/CSTP, January 1987.

Effective Teacher Evaluation Practices

Once teachers have been tested and licensed and have been hired through a carefully designed and administered selection process, their performance must be evaluated. Here, too, teachers themselves should be involved in improving the quality of evaluation, and thus the quality of education.

The new career-ladder and master-teacher policies that reflect present concern for the quality of education and of teachers presuppose the existence of effective teacher evaluation systems. If the evaluation system is not credible, then no one will have confidence that the right teachers are being selected or rewarded, and the policies will fail. However, this report, the first comprehensive examination of teacher evaluation systems currently in use, concludes that most evaluation systems are not suitable for rating teachers for these new policies. Moreover, teacher evaluation requires substantial resources and a great deal of attention.

Most school districts do not have highly developed teacher evaluation systems, and even fewer use the results they obtain. Many evaluation schemes emphasize formal compliance with procedures and commit minimal resources. All too often, teacher evaluation involves no more than the principal's filling out a checklist once a year while sitting in the back of the class.

This study assessed how teacher evaluation practices work to improve personnel decisions and staff development. Staff surveyed 32 school districts with reputations for highly developed evaluation mechanisms and intensively studied four of the most advanced. The four exemplary systems all committed sufficient resources to the process, made sure their evaluators were competent, enlisted the cooperation of both teachers and administrators, and devised a system that was tailored to their particular district's educational and political characteristics. Findings show that teacher evaluation can be used effectively to terminate the employment of poor teachers—a conclusion that many educators previously debated. The study also provides guidance for educators on how to successfully evaluate teachers; it emphasizes that the amount of time evaluators have and their skills are more important than the exact procedures used.

In addition, case studies demonstrate that a single teacher evaluation process cannot simultaneously serve personnel decisionmaking and teacher improvement goals. School districts must decide their purpose, set realistic goals, and then match the process to the purpose. A system that focuses on the minimum skills expected of a teacher fulfills the perfectly legitimate purpose of eliminating incompetent teachers, but cannot be expected to determine who is an excellent teacher. Similarly, a process for helping teachers to improve their skills is not precise enough to classify people for promotion. Of course, a district may have several different processes to serve several different goals.

School district administrators must understand the educational and organizational implications of the teacher evaluation system they adopt. An evaluation system can define the nature of teaching and education in schools, and teachers rightfully resist systems that are not fair or valid. In particular, the system can either reinforce the idea of teaching as a profession by recognizing the complexity of teaching, or it can further deprofessionalize teaching by treating teachers as a collection of disembodied skills, making that system less able to attract and retain talented people.

Teacher Evaluation: A Study of Effective Practices, Arthur E. Wise, Linda Darling-Hammond, Milbrey W. McLaughlin, and Harriet T. Bernstein, The RAND Corporation, R-3139-NIE, June 1984.

Case Studies for Teacher Evaluation: A Study of Effective Practices, Arthur E. Wise, Linda Darling-Hammond, Milbrey W. McLaughlin, and Harriet T. Bernstein, The RAND Corporation, N-2133-NIE, June 1984.

TEACHER SUPPLY AND DEMAND

The Coming Teacher Shortage

The effectiveness of many reforms intended to improve the quality of public education—such as testing and licensing teachers and upgrading educational programs and curricula—depends on the quality of people entering and remaining in the teaching force. This report examines the current status of the teaching profession at a time when renewed efforts to improve the quality of education are occurring at the federal, state, and local levels. It demonstrates that dramatic changes in our nation's teaching force will soon lead to critical shortages of qualified teachers unless policies that restructure the teaching profession are pursued and unless teaching becomes an attractive career alternative for talented people. Otherwise,

schools will be forced to hire the least academically able to fill teaching vacancies, and these teachers will become the tenured teaching force for the next two generations of school children.

The author finds that the current highly educated and experienced teaching force is dwindling as older teachers retire in increasing numbers and many younger teachers leave for other occupations. New recruits to teaching are also less academically qualified than those leaving, and the number of new entrants is insufficient to meet the coming demand for teachers. In 1981, fewer than half the newly hired teachers in math and science were certified or eligible for certification in those subjects. Shortages of qualified teachers in math and science are expected to grow into a more generalized teacher shortage as enrollments increase and the supply of prospective teachers continues to shrink. Moreover, the most academically able teachers leave the profession within a very short time.

Factors contributing to the problem include:

- An increase in student enrollments while teacher retirements are also increasing
- Career choices for women and minorities that offer better pay, better working conditions, and more opportunity for advancement
- The relatively low salaries for teachers compared with those in other occupations requiring the same education
- The dwindling nonmonetary rewards of teaching.

Furthermore, teachers are increasingly viewed as bureaucratic functionaries rather than as practicing professionals. The most qualified are dissatisfied with the lack of administrative support for their work, the lack of input into professional decisionmaking, and the restrictive bureaucratic controls.

To begin treating the impending teacher shortage, the author recommended in 1984 raising beginning teachers' salaries to $20,000 and increasing career teachers' salaries up to $50,000. But higher salaries for teachers are only part of the solution. As in other occupations, one partial substitution for wages is working conditions that affect teachers' abilities to perform their jobs effectively—especially the degree of professionalism allowed in the work structure. The professionalization of teaching requires a new career structure including professionally enforced entry requirements and standards of practice, supervised induction into teaching, autonomous performance after induction, and increased responsibility for decisionmaking with increased competence.

Beyond the Commission Reports: The Coming Crisis in Teaching, Linda Darling-Hammond, The RAND Corporation, R-3177-RC, July 1984.

The Changing Appeal of Teaching

This report presents a historical perspective on the desirability of teaching as a professional career. The authors point out that, whatever its current status may be, teaching has become a far more desirable occupation during the twentieth century. In addition, history suggests that the status of teaching as a profession improves substantially when standards for entry are raised.

Contrary to modern-day assumptions, teacher shortages have been common throughout this century, and it has always been difficult to recruit and retain talented teachers. The

surplus of the last decade was an exception. This study points out, however, that raising educational and certification standards for entry into the profession may help alleviate rather than exacerbate the nation's looming teacher shortage. Requirements such as teacher testing and graduate-level professional education are not likely to discourage able students from considering a teaching career, at least when accompanied by significant increases in salaries.

Until recently, recurrent teacher shortages were eased by the availability of relatively well-qualified women and minorities who had few alternatives if they wanted respectable middle-class work. The presence of qualified women in particular provided a cushion that allowed most districts to keep financial incentives low and to ignore requests for improved working conditions. But as women have begun to explore other career opportunities, they no longer constitute a captive labor pool for the teaching profession. Although the success of the women's movement may be adding to the teacher shortage, it may also promote the professionalization of teaching in new ways.

The authors also note that the desirability of teaching, as of most occupations, has been shaped largely by economic incentives. Teachers' salaries have increased in purchasing power since the early twentieth century, but, at the same time, other occupations that require similar education and training have gradually increased their earnings relative to those of teaching. Moreover, male teachers have generally outearned their female colleagues, white teachers have outearned minorities, and teachers in the privileged suburbs and larger cities have earned more than those in rural and smaller districts. On the other hand, earnings of the different groups have been converging since World War II, as uniform salary schedules have been widely adopted, professional credentialing has approached parity, and states have made deliberate efforts to equalize salaries between wealthy and poor districts.

The social origins of the teaching force have also changed substantially during this century. Men from urban, working-class families were increasingly attracted to the profession after 1920 through higher salaries, improved benefits, and the promise of career advancement into administration. Simultaneously, teaching continued to attract middle-class women whose career alternatives were limited, or who simply were committed to teaching. But expanded access to desirable alternative careers for women poses a recruiting challenge to teaching. What changes will teaching have to make to appeal to women who have options?

Who Will Teach? Historical Perspectives on the Changing Appeal of Teaching as a Profession, Michael Sedlak and Steven Schlossman, The RAND Corporation, R-3472-CSTP, November 1986.

Assessing Teacher Supply and Demand

This study analyzed factors that affect the supply of and demand for teachers at a time when teacher shortages seem to be on the rise and concerns about teacher quality are growing. It was prepared for the Center for Education Statistics (CES) in the U.S. Department of Education to guide the design of a data-collection system for monitoring the teacher workforce. It prescribes data requirement and data-collection procedures for redesigning surveys that are CES's major means of collecting information on the nation's teachers, school staffing patterns, and factors related to teacher supply and demand.

The sources for this information are the Teacher Demand and Shortage Survey, the Public and Private School Surveys, the Public and Private School Teacher Surveys, and the

Follow-Up Survey of Teachers. These surveys gather information that helps assess the current status of teachers on many dimensions; they also provide data for analyzing flows into, out of, and within the teacher workforce.

On reviewing the current data sources, the authors find that some basic information is unavailable: teacher qualifications, demographic characteristics, teacher loads, salary and income levels, mobility patterns, and turn-over rates. Educational scholars cannot paint a clear picture of the present condition of teaching, nor very well predict its future.

This study also shows that teacher supply and demand are difficult notions to quantify, partly because they depend on many local factors affecting the decision of teachers and prospective teachers. In addition, assessing supply and demand depends on qualitative distinctions that underlie categorizations of teachers, such as *qualified, certified, competent*, and *out-of-field*. When teacher shortages can be defined and quantified in numerous ways, it becomes very difficult to judge the severity of shortages. A national database on teaching must be very comprehensive to permit isolating imbalances in supply and demand by state, sector, level, and field. This study shows that teacher turnover is the dominant factor in projecting demand for new teachers and underscores the need for far more detailed data on the changing tides of teachers into, out of, and within teaching.

The authors conclude that the current database on teachers is woefully deficient for assessing the condition of teaching in the nation's schools; it does not adequately profile the nation's teacher force or help assess teacher supply and demand. CES cannot provide reasonably accurate counts of teachers by level for any year since 1980; nor does it have the detailed information about teachers and schools for gauging the severity of school staffing problems or to pinpoint teacher shortages by state, sector, level, and field.

To remedy this situation, CES must be able to fulfill its mission to report full and complete statistics on the nation's schools—both public and private. At a minimum, data must be gathered for consistent, reliable time series counts of teachers and enrollments by grade level in all schools. Once the gaps in the CES database are filled, the four surveys that the authors helped redesign should provide information for assessing the condition of teaching, but they need to be reoriented to concentrate on key dimensions of teacher supply and demand. In particular, local-level data are needed to provide estimates of (1) numbers of teachers by field, certification status, and sources of entry; (2) teacher shortages by field; and (3) teacher turnover by field and teachers' reasons for leaving.

The authors recommend expanding CES's survey of public and private school teachers to gather much more comprehensive information on teachers' assignments, qualifications, work history, demographic characteristics, marital and family status, and sources of personal and family income. Finally, the Follow-Up Survey of Teachers should be fielded in 1989 to find out why teachers have quit, their current activities, salary and income levels, and plans for reentry into teaching. Such data are essential for determining who leaves teaching and why.

Assessing Teacher Supply and Demand, Gus W. Haggstrom, Linda Darling-Hammond, and David W. Grismer, The RAND Corporation, R-3633-ED/CSTP, May 1988.

Understanding Teacher Attrition

The above study, in addition to contributing to CES surveys, will result in a number of reports of which "Understanding Teacher Attrition" is the first.

Teacher attrition is the most important factor determining the demand for new teachers and the number to be hired. It is also the most difficult demand factor to estimate. Inaccurate forecasts can lead to poor occupational choices and bad decisions in training investment; they can also lead to inefficiency in setting teacher salary levels. This report develops a strategy for improving both national and state forecasts of future teacher attrition rates.

According to the authors, understanding patterns of teacher attrition requires first that attrition decisions be placed in the context of the career and life cycle of individual teachers. Life cycle events influencing teacher attrition include marriage, migration, births, entry of children into school, and retirement. Career patterns include moving to better teaching jobs, returning to school, and moving out of teaching into other education-related jobs such as administration.

The authors offer a theory of teacher attrition that attempts to account for the disparate reasons for attrition and to explain the patterns of attrition unique to each life cycle and career stage. The major prediction from the theory is that teacher attrition patterns will follow a U-shaped curve over the life cycle: Age-specific attrition probabilities will be high for younger teachers, very low for middle-aged teachers, and high once again at retirement age. The theory also predicts that the specific shape of the U curve will be different for men and women.

Evidence from available state time-series data confirms the life cycle theory of teacher attrition and suggests that present attrition rates are near the lowest levels they have been over the last 25 years because in recent years schools have done relatively little hiring. However, these rates will increase over the next 15 years as midcareer teachers become eligible to retire and as expanded enrollments present more positions and allow for more mobility and promotion.

Inadequate and unanalyzed data have yielded weak forecasts of teacher attrition. There is no national data or information system on teacher attrition, and states vary markedly in their capacity to provide it. But one-third to one-half of the states maintain teacher census files, representing an untapped resource for improving teacher attrition and supply and demand estimates; centralizing selective files will form a national database for further analyses. Another approach under way to improve the data is a large national survey of teachers with a longitudinal followup.

Although the recent oversupply of teachers during the 1970s dispelled much need for research on teacher attrition, the impending shortage of teachers has changed the picture. New data collection should be used to develop (1) improved attrition forecasts for use in teacher supply and demand models and (2) the means for improving the quality and efficiency of the teaching work force. To counter the tendencies toward declining quality and relaxed requirements for meeting higher demand, we will need policies aimed at improving the quality and productivity of entering teachers, shortening their learning curve once in the teaching position, and evaluating and retaining better teachers. Research on teacher attrition is an important part of formulating these policies.

Teacher Attrition: The Uphill Climb To Staff the Nation's Schools, David W. Grissmer and Sheila Nataraj Kirby, The RAND Corporation, R-3512-CSTP, August 1987.

EDUCATIONAL REFORM

Teacher Unions and Educational Reform

Teacher unions seek to improve their members' salaries and working conditions through collective bargaining and political action at the national, state, and local levels. Their efforts also influence the funding and governance of public education. Thus, they play a prominent role in shaping policies that affect public schools. Because of recent policies—focusing on teacher training, certification, and compensation—teacher unions have become even more critical in shaping future public education in America. This report examines the role of teacher unions in reform efforts of the 1980s and their stance on greater professionalism.

Teacher organizations made great strides for their members in the 1970s. But, with relatively few exceptions, the advances in working conditions that unions had attained by 1975 were not improved in the 1980 and 1985 contracts.

To test whether a strong contract is the route to greater teacher professionalism, we analyzed contracts for provisions that give teachers (1) greater autonomy to exercise their professional judgment, (2) meaningful participation in instructional policy decisions, and (3) resources considered helpful for professional teaching. Those unions that had obtained provisions, such as limits on the length of the school day, guaranteed preparation periods, and well-specified reduction-in-force procedures by 1975, were significantly more likely to have also gained professional items for their members. This finding suggests, as unions have argued, that attaining key bread-and-butter items regulating working conditions is a precondition for enhancing teacher professionalism through contracts.

In the move toward greater professionalism, a major challenge for teacher unions is to obtain sufficient benefits to maintain their membership and at the same time to bargain and compromise effectively over political issues. Maintaining that balance has been particularly difficult in the face of educational reform initiatives. If a union decides to lead efforts to improve teacher professionalism, it may please policymakers, who wish to create a more performance-based profession, but lose member support: The rank-and-file expect their union to preserve a seniority system and obtain concrete benefits. If a union opposes the policymakers, it might satisfy its members but possibly diminish support for public education. Given the costs of active reform leadership or opposition, a third option is to accommodate the reform proposals advanced by others.

National, state, and local teacher organizations have responded to educational reform in different ways. Both the American Federation of Teachers and the National Education Association now support approaches to teacher professionalism. State organizations, initially opposing reforms viewed as being against their interests, now accommodate new policy directions but tend not to shape new approaches; they have been reactors rather than innovators. With only a few exceptions, local teacher organizations responded to reform initiatives in an accommodating manner, believing that reform policies were peripheral to their concerns; they saw little need for approaches that departed from concerns of traditional collective bargaining. Most of the rank-and-file expect their union to obtain material benefits, and, in their conception, any desirable gains of professionalism should also be material. Some rank-and-file are even hostile to strategies for enhancing professionalism; they fear that, in pursuing reform inititives, union leaders might be trading off higher salaries and smaller class sizes.

But teachers in unions may need to adapt. In several school districts spotlighted by the national media, labor and management have worked in collaboration to restructure teachers' work lives and improve their professional responsibilities. If these instances are to become a

national trend, teachers will have to revise their expectations about their own role and that of unions. The challenge for teacher organizations is to reframe the issue: The policy community must feel that its demands for higher-quality teachers are being met, and teachers must regard the payoff from greater professionalism more positively.

In short, reform policies cannot be substituted for traditional items that regulate teachers' basic working conditions. Furthermore, simply because not all teachers seek the new roles that accompany enhanced professionalism, policymakers must not treat them as second-class citizens. Finally, policymakers and reform advocates must make the inevitable bargaining tradeoffs more acceptable to both local union leaders and rank-and-file members.

Teacher Unions and Educational Reform, Lorraine M. McDonnell and Anthony Pascal, The RAND Corporation, JRE-01, April 1988.

ADDITIONAL PUBLICATIONS

The center's research is also disseminated through journal articles and book chapters, RAND Notes, commission reports, and newspaper "op-ed" pieces.

JOURNAL ARTICLES AND BOOK CHAPTERS

"Professional Teaching: A New Paradigm for the Management of Education," Arthur E. Wise, in *Schooling for Tomorrow: Directing Reforms to Issues that Count*, Boston: Allyn and Bacon, 1989.

Argues that professional accountability is a new model for managing the schools, one which requires sophisticated leadership by school administrators.

"Policy and Professionalism," Linda Darling-Hammond, chapter in Ann Lieberman (ed.), *Building a Professional Culture in Schools*, New York: Teachers College Press, 1988.

Describes how educational policy detracts from or contributes to professionalism in a school's culture.

"Teacher Quality and Educational Equality," Linda Darling-Hammond, article in *The College Board Review*, No. 148, Summer 1988.

Reveals how poor and minority students often are assigned to unqualified or new teachers.

"Between a Rock and a Hard Place: The Humanities and School Reform," Linda Darling-Hammond, article in *Basic Education*, Vol. 3, No. 2, Winter 1987–88.

Reveals how process-oriented educational policies alter educational substance in the humanities.

"Teacher Professionalism," A. E. Wise, article in *Encyclopedia of School Administration and Supervision*, Richard A. Gorton, Gail T. Schneider, and James C. Fisher (eds.), Phoenix/New York: Onyx Press, 1988.

Describes practices for school districts that wish to manage teaching staffs professionally.

"Selecting Teachers: The Best, the Known, and the Persistent," Arthur E. Wise, Linda Darling-Hammond, and Barnett Berry, article in *Educational Leadership*, Vol. 45, No. 5, February 1988.

Explains how school districts often hire not the best candidates but those who are locally-known and/or persistent.

"The Two Conflicting Trends in Educational Reform: Legislated Learning Revisited," Arthur E. Wise, article in *Kappan*, January 1988.

Reviews the legislated learning thesis that top-down control leads to more bureaucracy and shows the difference between the first and second "waves" of reform.

"Schools for Tomorrow's Teachers," L. Darling-Hammond, article in *Teachers College Record*, Spring 1987.

Warns that some reforms may further bureaucratize schools and suggests how to design schools to accommodate a profession of teaching.

"The Educational Reform Dilemma," L. Darling-Hammond, article in *Basic Education*, Spring 1987.

Describes dilemmas created when reformers try to regulate the content of teaching.

"The Over-Regulated Curriculum," L. Darling-Hammond, article in *Administrator Bulletin*, March 1987.

Traces the effects of regulation on the curriculum and teaching.

"Graduate Teacher Education and Teacher Professionalism," A. E. Wise, article in *Journal of Teacher Education*, September/October 1986.

Explores the role of liberal education and graduate-level teacher education in the professionalization of teaching.

"Toward a Teaching Profession," A. E. Wise, article in *Portland*, Autumn 1986.

Suggests that changes in teacher education may change public views of teachers.

"Teaching Knowledge: How Do We Test It?" L. Darling-Hammond, article in *American Educator*, Vol. 10, No. 3, Fall 1986.

Argues that teaching knowledge cannot be tested by simplistic, multiple-choice, context-free examinations.

"Three Scenarios for the Future of Teaching," A. E. Wise, article in *Phi Delta Kappan*, May 1986.

Suggests three scenarios for the future of teaching and describes the conditions under which each would emerge.

"Beyond Standardization: State Standards and School Improvement," L. Darling-Hammond and A. E. Wise, article in *Elementary School Journal*, January 1985.

Using data from interviews with teachers, assesses the impact of state school improvement policies on educational practice.

"Teacher Evaluation and Teacher Professionalism," A. E. Wise and L. Darling-Hammond, article in *Educational Leadership*, Vol. 42, No. 4, December 1984/January 1985.

Describes how professional teacher evaluation practices can improve the quality of teachers and teaching.

"Valuing Teachers: The Making of a Profession," L. Darling-Hammond, article in *Teachers College Record*, Winter 1985.

Analyzes how some educational policies value teachers whereas others devalue teaching.

"Taking the Measure of Excellence: The Case Against Basing Teacher Evaluation on Student Test Scores," L. Darling-Hammond, article in *American Educator*, Vol. 8, No. 3, Fall 1984.

Reveals some of the dysfunctional consequences of using student test scores to evaluate teachers.

"Teacher Evaluation in the Organizational Context: A Review of the Literature," L. Darling-Hammond, A. E. Wise, and S. R. Pease, article in *Review of Educational Research*, Vol. 53, No. 3, 1983.

Award-winning review that places teacher evaluation in the context of school organization.

"Teaching Standards, or Standardized Teaching?" L. Darling-Hammond and A. E. Wise, article in *Educational Leadership*, Vol. 41, No. 2, October 1983.

Suggests that some standard-setting policies force teachers into standardized practices that may not work for all students.

"A Proposal for Evaluation in the Teaching Profession," L. Darling-Hammond, article in *Elementary School Journal*, Vol. 86, No. 4, March 1986.

Examines evaluation in medical and other fields and explores implications for education.

Legislated Learning: The Bureaucratization of the American Classroom, A. E. Wise, University of California Press, Berkeley, 1979.

Critically examines some of the effects of government regulation on the American classroom, foreshadowing the emergence of teacher professionalism.

RAND NOTES

Recruiting Mathematics and Science Teachers through Nontraditional Programs: A Survey, Neil B. Carey, Brian S. Mittman, and Linda Darling-Hammond, The RAND Corporation, N-2736-FF/CSTP, May 1988.

Surveys alternate certification programs, nontraditional recruitment programs, and retraining programs.

The Qualifications of Teachers in American High Schools, A. H. Pascal, The RAND Corporation, N-2547-CSTP, February 1987.

Examines the formal qualifications of America's current high school teachers.

A Conceptual Framework for Examining Teachers' Views of Teaching and Educational Policies, L. Darling-Hammond and A. E. Wise, The RAND Corporation, N-1668-FF, February 1981.

Looks in detail at alternative theories of education and teaching and their implications for policy and practice.

COMMISSION REPORTS

The Report of the Commissioner's Task Force on the Teaching Profession, Task Force on the Teaching Profession, New York, March 1988.

A task force report, prepared with the assistance of RAND staff, recommending new policies for the restructuring of schools in New York State.

Teachers for Today & Tomorrow: Recommendations for Attracting, Preparing, Retaining and Rewarding Teachers in Connecticut, The Report of the Governor's Commission on Equity and Excellence in Education, Hartford, Connecticut, June 1985.

A commission report, prepared with the assistance of RAND staff, recommending new policies for Connecticut.

"Testing Teachers for Certification: An Overview of the Issues," L. Darling-Hammond and A. E. Wise, paper prepared for the Minnesota Higher Education Coordinating Board, August 1984.

Analyzes several approaches to appraising teachers for the purpose of certification.

A Study of Teacher Incentives for the District of Columbia Public Schools: Summary Report, District of Columbia Public Schools, May 1984; and *Technical Report*, District of Columbia Public Schools, June 1984.

A report, prepared with the assistance of RAND staff, recommending new policies and practices for D.C. schools.

OP-ED ARTICLES

"On the 'S^3 Paradox' in Education," A. E. Wise, *Education Week*, May 18, 1988.

Argues that raising standards and salaries simultaneously has increased teacher supply in the past and would do so again in the future.

"Reform's Bad Apples: Standardized Tests Don't Measure Real Learning," Linda Darling-Hammond, *The Orlando Sentinel*, December 13, 1987.

Explains that standardized tests measure only very limited forms of learning and contrasts these forms with the advanced skills needed in the 21st Century.

"Who Should Provide Instructional Leadership? The Case for Teacher Involvement," L. Darling-Hammond, Commentary, *Education Week*, August 4, 1987.

In counterpoint format, lays out an argument for teacher involvement in instructional leadership.

"What Constitutes a 'Real' Shortage of Teachers?" L. Darling-Hammond, Commentary, *Education Week*, January 14, 1987.

Suggests that whether or not a shortage of teachers exists depends upon the definition of "teachers."

"Maryland's Crisis in Teacher Quality and Quantity," A. E. Wise, *Baltimore Sun*, January 4, 1987.

Shows variation among Maryland's school districts in overall expenditures and teachers' salaries and relates these to teacher supply and quality.

"A Case for Trusting Teachers To Regulate Their Profession," in A. E. Wise, Commentary, *Education Week*, October 8, 1986.

Analyzes underlying dynamics that affect teacher salary, supply, and quality.

"Mad Hatter Tests of Teaching," L. Darling-Hammond, *The New York Times*, January 8, 1984. Reprinted in Beatrice and Ronald Gross (eds.), *The Great School Debate*, Simon & Schuster, New York, 1985.

Reveals the limitations of certain approaches to the testing of students.

RESEARCH IN PROGRESS

Work is currently under way in four areas related to teacher quality and supply: teacher education and licensing; teacher selection and evaluation; teacher supply and demand; and educational reform.

TEACHER EDUCATION AND LICENSING

The Content and Control of Teacher Testing
Examines the conditions under which state-mandated licensing tests will help improve the academic and professional qualifications of teachers.

Professional Licensing for Teachers
Implementing the concepts outlined in R-3576 (see page 5 of this report), designs an overall structure for assessing the knowledge, skills, and performance of beginning teachers.

TEACHER SELECTION AND EVALUATION

New Recruits into Mathematics and Science Teaching
Analyzes the nature and feasibility of alternative entry routes to teaching (described in N-2736; see page 17 of this report), specifically, of nontraditional programs to prepare mathematics and science teachers.

TEACHER SUPPLY AND DEMAND

Supply of Minority Teachers
Examines college attendance patterns, fields of concentration, graduate and professional school enrollment, and career choice among minority students.

State Data on Teacher Supply and Demand
Going beyond the data presented in R-3633 (see page 10 of this report), evaluates trends indicated by existing state-level data on teacher supply and demand.

A Conceptual Framework for Examining Staffing and Schooling
Sets forth a conceptual framework for examining the characteristics of school personnel, policies that affect school staffing, and attributes of schools as workplaces and as educational organizations.

State-Based Model of Teacher and Administrator Supply and Demand
Develops model and applies it to Indiana data to project future needs.

EDUCATIONAL REFORM

Teacher Characteristics and Teaching Practice
Examines the statistical relationship among the school conditions, the characteristics of teachers, and teaching practices using data from the National Assessment of Educational Progress.

Teacher Professionalism
Draws together, in book-length treatment, data and analysis from the center's and others' work to portray the prospects for teacher professionalism.

Progress in Urban School Districts
Examines six cities that have mobilized to improve their schools and identifies conditions necessary to bring about progress.

DISSEMINATION

Although publication of policy-oriented research is the major vehicle for dissemination of the center's work, significant effort is made to bring the results of the center's work directly to educational policymakers and to those who seek to influence educational policy. The center's staff members have made dozens of presentations to government agencies, school districts, education associations, policymaker associations, foundation officials, and university audiences on such teacher-related topics as supply and demand, professionalism, evaluation, preparation, testing and certification, and the relation between these and educational reform, educational equity, and school finance. A partial list of the agencies and associations addressed between October 1985 and September 1988 follows.

GOVERNMENT AGENCIES AND SCHOOL SYSTEMS

Alexandria Public Schools, Virginia
Bucks County Intermediate School District, Pennsylvania
California State Department of Education
Capital Area School Development Association, New York
Colorado Department of Education
Connecticut Department of Education
Connecticut Regional School District 15
District of Columbia Public Schools
Department of Defense Dependent Schools
Federal Reserve Board, Boston
Fairfax County Public Schools, Virginia
Florida Education Standards Commission
Florida Professional Teacher Task Force
Government Accounting Office
Indiana Department of Education
Iowa Department of Education
Jefferson County Public Schools, Kentucky
Kentucky House Education Committee
Mamaroneck Public Schools, New York
Maryland Department of Education
Maryland House Constitutional and Administrative Law Committee
Minnesota Board of Teaching
Montana State Board of Public Education
Montgomery County Public Schools, Maryland
New Jersey Department of Education
New York City Schools Task Force on Professionalism
New York Senate Education Committee
New York State Department of Education
Ohio Department of Education
Oregon Joint Legislative Committee on Education
Oregon Joint Legislative Committee on Revenue and Finance

Pittsford Central School District, New York
U.S. Department of Education
World Bank

ASSOCIATIONS, COMMISSIONS, AND OTHER ORGANIZATIONS

American Association for the Advancement of Science
American Association of Colleges for Teacher Education
American Association for Higher Education
American Association of School Administrators
American Enterprise Institute
American Educational Finance Association
American Educational Research Association
American Federation of Teachers
Association of Baltimore Area Grantmakers
Association for Supervision and Curriculum Development
BELL Conference
Burger King Foundation
Carnegie Council on Adolescent Development
Center for Creative Leadership
Commission on Professionals in Science and Technology
Connecticut Association of School Personnel Administrators
Council for Basic Education
Council of Chief State School Officers
Council on Foundations
Council of Graduate Schools
Council of Great City Schools
Education Commission of the States
Education Development Center, Inc.
Educational Leaders Consortium
Educational Testing Service
Forum of Educational Organization Leaders
Georgia Principals Institute
Holmes Group
Institute for Educational Leadership
Institute for International Education
International Society for Educational Planning
Interstate Teacher Assessment and Support Consortium
Johnson Foundation/Wingspread
Metropolitan School Study Council, New York City
Middle States Association
NAACP Legal Defense Fund
National Association of Elementary School Principals
National Association of Independent Schools
National Association of State Boards of Education
National Association of State Universities and Land Grant Colleges
National Conference of State Legislatures

National Council for the Accreditation of Teacher Education
National Council of States for Inservice Education
National Education Association
National Governors' Association
National School Boards Association
New York Partnership
North Carolina Association of School Administrators
Public School Forum of North Carolina
Phi Delta Kappa
Rockefeller Brothers Fund
U.S.-Australia Education Policy Conference
Work in America

UNIVERSITIES

Adelphi University
Boston University
Gallaudet University
Harvard University
Howard University
Montana State University
Ohio State University
Rutgers University
State University of New York, Albany
Temple University
Trinity University
University of Akron
University of Georgia
University of Illinois, Chicago Circle
University of Louisville
University of Lowell
University of Miami
University of Southern California
University of Washington
University of Wisconsin, Milwaukee
Virginia Polytechnic Institute
West Virginia University

MANAGEMENT

The CSTP is part of RAND's Domestic Research Division and operates within its Education and Human Resources Program. Arthur E. Wise is the director of the CSTP and Linda Darling-Hammond is the director of the Education and Human Resources Program. Wise and Darling-Hammond have been collaborating on research pertaining to teachers for the last nine years.

Dr. Wise's experience has regularly placed him at the intersection of educational research and educational policy. He is the author of *Rich Schools, Poor Schools: The Promise of Equal Educational Opportunity*—the book that conceived the idea of such school finance reform lawsuits as *Serrano, Rodriguez*, and *Robinson*. In 1979, he published *Legislated Learning: The Bureaucratization of the American Classroom*—a book that foresaw the emergence of teacher professionalism. He served as a consultant to President Carter's Reorganization Project to create the U.S. Department of Education. In addition, he has served as a consultant to numerous federal, state, and local agencies. Wise has been an Associate Director of the National Institute of Education, a Visiting Scholar at the Educational Testing Service, and an Associate Dean and Associate Professor of Education at the University of Chicago.

Dr. Darling-Hammond is the author of the widely cited RAND report, *Beyond the Commission Reports: The Coming Crisis in Teaching*, and of numerous other reports and articles on teaching policies and practices. She directed a major project for the U.S. Department of Education's Center for Statistics on the assessment of teacher supply and demand and the development of indicators of school and staffing quality. She designed and supervised the congressionally mandated study of teacher incentives in the District of Columbia Public Schools and directed an effort to provide research and development assistance to the school system. Before joining RAND, she was director of research on urban education for the National Urban Coalition. She has been a classroom teacher and an education school faculty member.

STAFF

RAND staff members are associated with the center as they engage in center projects. Former staff members, identified with asterisks, are now RAND Consultants. Associated with the center from 1985 to 1988 were:

RAND Staff

Barnett Berry*
Neil Carey*
Linda Darling-Hammond
Tamar Gendler
David Grissmer
Gus Haggstrom
Jennifer Hawes
Paul T. Hill
Lisa Hudson
Sheila Kirby
Stephen Klein
Daniel Koretz
Lorraine McDonnell
Brian S. Mittman
Jeannie Oaks
Anthony Pascal
Amy Praskac*
Susanna Purnell
Leslie Shapiro
Richard Shavelson*
Steven Schlossman*
Arthur E. Wise

RAND Consultants

David Berliner
Ronald Bird
Wilmer S. Cody
Emil Haller
Susan Rosenholtz
Marta Samulon
Phillip Schlechty
Michael Sedlak
Harriet Tyson-Bernstein

Linda Darling-Hammond, David Grissmer, Sheila Kirby, and Arthur E. Wise

FUNDING

The center's initial funding of $100,000 was provided by the Metropolitan Life Foundation. A $300,000 grant over three years was awarded by the James S. McDonnell Foundation. Also awarded were two-year grants from the Conrad N. Hilton Foundation and the Aetna Life & Casualty Foundation.

Project support has been received from The Ford Foundation, the Minnesota Board of Teaching, the Lilly Endowment, Inc., the McDonnell Foundation, and the Southwestern Bell Foundation. The center's work on teacher supply and demand was financed largely by the National Center for Education Statistics of the U.S. Department of Education. In 1988, the Hilton Foundation renewed its support for the center with a $100,000 grant.

The CSTP seeks funds to support its research and dissemination activities from private and corporate foundations; it also seeks arrangements with government agencies and foundations wherein it can facilitate policy development at the state, local, and national levels.

ABOUT THE RAND CORPORATION

By charter, RAND is a "nonprofit corporation formed to further and promote scientific, educational, and charitable purposes, all for the public welfare and security of the United States of America." RAND's corporate mission is rigorous analysis of significant public problems. Since its founding in 1948, RAND has been providing public decisionmakers with a better understanding of policy issues critical to the nation's security and welfare. RAND has helped to formulate and evaluate alternative policies in education, health care, research and development, energy, military manpower and training, public order, housing, water resources, anti-terrorism, international development, and national defense.

THE RAND CORPORATION BOARD OF TRUSTEES

Lloyd N. Morrisett, Chairman; President, The John and Mary R. Markle Foundation

Peter S. Bing

Harold Brown, Chairman, Johns Hopkins Foreign Policy Institute of the School of Advanced International Studies

Solomon J. Buchsbaum, Executive Vice President, Customer Systems, AT&T Bell Laboratories

Michael Collins, President, Michael Collins Associates

Richard P. Cooley, Chairman of the Board, Seafirst Corporation

Ann F. Friedlaender, Dean, School of Humanities & Social Science, Massachusetts Institute of Technology

James C. Gaither, Managing Partner, Cooley, Godward, Castro, Huddleson & Tatum

Harold J. Haynes, Retired Chairman and Chief Executive Officer, Chevron

Walter J. Humann, Chairman & Chief Executive Officer, Hunt Investment Corporation

Walter E. Massey, Vice President of the University of Chicago for Research and for Argonne National Laboratory

Michael M. May, Associate Director at Large, Lawrence Livermore National Laboratory

G. G. Michelson, Senior Vice President for External Affairs, R. H. Macy & Company, Inc.

Newton N. Minow, Partner, Sidley & Austin

J. Richard Munro, Chairman and Chief Executive Officer, Time Inc.

Paul H. O'Neill, Chairman of the Board and Chief Executive Officer, Alcoa

John S. Reed, Chairman and Chief Executive Officer, Citicorp

Donald B. Rice, President and Chief Executive Officer, The RAND Corporation

Paul G. Rogers, Partner, Hogan & Hartson

Donald H. Rumsfeld, Senior Advisor, William Blair & Co.

Brent Scowcroft, Vice Chairman, Kissinger Associates, Inc.

Donald W. Seldin, M.D., William Buchanan Professor of Internal Medicine, University of Texas Southwestern Medical Center

Gustave H. Shubert, Senior Vice President, The RAND Corporation

Charles J. Zwick, Chairman and Chief Executive Officer, Southeast Bank, N.A.

November 1988

FOR FURTHER INFORMATION:

Center for the Study of the Teaching Profession
The RAND Corporation
2100 M Street, N.W.
Washington, D.C. 20037
(202) 296–5000

FOR RAND PUBLICATIONS:

To order the publications summarized in **COMPLETED RESEARCH**, use the attached Order Form on the next page or write to:

Publications Department
The RAND Corporation
1700 Main Street
P.O. Box 2138
Santa Monica, CA 90406–2138
(213) 393–0411, Ext. 6686

ORDER FORM

RAND publications are available directly from: Publications Department, The RAND Corporation, 1700 Main Street, P.O. Box 2138, Santa Monica, CA 90406-2138. A 25% discount is offered with each order of 25 or more copies of any individual publication. Payment must accompany all orders.

Please indicate shipping address:

NAME (AREA) PHONE

COMPANY

ADDRESS MAIL STOP/SUITE/DEPT./BUILDING

CITY/STATE/ZIP

Quantity	Publication	Price	Total Price
	R-3139-NIE	$7.50	
	R-3177-RC	$4.00	
	R-3462-NIE/CSTP	$10.00	
	R-3472-CSTP	$4.00	
	R-3512-CSTP	$7.50	
	R-3576-MBOT/CSTP	$7.50	
	R-3633-ED/CSTP	$7.50	
	N-2133-NIE	$15.00	
	N-2513-NIE/CSTP	$20.00	
	N-2736-FF/CSTP	$7.50	
	JRE-01	$7.50	
	JRE-02	$7.50	

TOTAL PRICE:

California residents add 6.5% sales tax:

TOTAL AMOUNT OF PAYMENT ENCLOSED:

☐ Also, please send SB-1026, a bibliography of abstracts of current and earlier RAND publications on education. Available without charge.